

## Four Forest Restoration Initiative

Quarterly Stakeholder Newsletter



### A Year of Forest Restoration: 2016 in Review

The U.S. Forest Service (hereafter USFS) and the 4FRI Stakeholder Group continually focus on the future—striving to achieve our vision of a healthy, restored forest. Sometimes, though, looking back on past achievements is equally important, to remind us how far we’ve traveled. How did our forest restoration efforts fare in 2016? The USFS provided us with a synopsis.

Restoration activities accelerated nearly 170% on the 4FRI landscape in 2016 from the prior year with multiple activities, largely due to additional funding. An extra \$11,600,000 helped to move timber offerings, increase prescribed fire accomplishments, complete 300,000 acres of wildlife surveys (primarily northern goshawk and Mexican spotted owl surveys), and survey cultural resources over 100,000 acres. Here are some additional highlights:

#### Treatments and Industry Support

- ⇒ 15,000 acres of timber was offered on the Apache-Sitgreaves National Forests to help existing White Mountain industries.
- ⇒ A coordinated “All-Lands” management approach between USFS, AZ State lands, and City of Flagstaff helped bring material to existing mills on west side.
- ⇒ A wet spring and early summer allowed several natural fires to be managed, not suppressed. Of 100,000 acres of managed wildfires, 74,000 acres were managed for resource benefits.
- ⇒ Extension of the Healthy Forest Pilot Program designed by Eastern Arizona Counties for one year will continue data collection on the effect of increasing the logging truck’s maximum weight from 80,000 pounds to 90,800 pounds on certain designated Arizona highways in the White Mountains, which will help hauling costs.
- ⇒ The Northern Arizona Forest Fund (NAFF), a partnership between the National Forest Foundation and Salt River Project, contributed \$640,000 from investments made by Arizona businesses and residents to watershed improvement projects on national forest lands in the Salt and Verde river basins. These funds helped treat the Stoneman Lake Watershed Health and Habitat Protection Project on the Coconino National Forest, the McCracken Woodland Health and Habitat Improvement Project on the Kaibab National Forest, and the Black River Stream and Riparian Protection Project on the Apache-Sitgreaves National Forests. For a summary of these projects, see [Northern Arizona Forest Fund](#).



Photo: Flagstaff Fire Department

### Calendar

Natural Resources Working Group	Feb. 21 Mar. 21 Apr. 18
<a href="#">Greater Flagstaff Forest Partnership</a>	Feb. 21 Mar. 21 Apr. 18
<a href="#">4FRI Stakeholders</a>	Feb. 22 Mar. 22 Apr. 26
Multi-Party Monitoring Board	Contact <a href="#">Bryce Esch</a>
Comprehensive Implementation Working Group	Feb. 9 Mar. 9 Apr. 13 Contact <a href="#">Travis Bruner</a>

#### Are You Prepared?

May 6, 2017 is National Fire Preparedness Day. Sponsor State Farm is awarding funds for communities who wish to host an event on that date (proposals due March 3). The City of Flagstaff will be hosting an event on that day (time/place to be determined), and wants to encourage other communities to join in a broader northern Arizona effort! Please see the National Fire Protection Association [webpage](#) for more information.

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## A Year of Forest Restoration: 2016 in Review, cont'd

### Innovation

#### Digital Restoration Guide Technology

- ⇒ The Nature Conservancy (TNC), USFS, wood harvesters, and other partners continue to **test and evaluate the costs and benefits of using tablets** and associated satellite imagery and data in both site preparation (marking trees and other activities) and harvesting operations. TNC and the USFS have been outreaching this Digital Restoration Guide (DRG) technology to multiple audiences, including John Deere (for integration with their Timber-Navi® hardware); the Natural Resources Working Group, and several national-level conferences held throughout the year.
- ⇒ USFS, Arizona Department of Forestry and Fire Management, and TNC used the **Bob Fry project area to test project layout with tablets**, harvesting 114 acres on the Bob Fry project on state land.
- ⇒ The City of Flagstaff and TNC worked with partners on a similar tablet technology test on a **500-acre treatment on City-owned Observatory Mesa**.
- ⇒ **The USFS broadened the use of tablet technology** on nearly 2,500 acres on the Flagstaff Ranger District (Coconino NF); additional tablet use through the Farm Bill authority on two Kaibab National Forest (Cougar Park and Junction Timber) sales are ready for 2017 offerings.



Photo: The Nature Conservancy

#### Mobile Applications

- ⇒ A mobile app created by the Springs Stewards Institute and USFS is being used by citizen scientists to collect spring condition data across the 4FRI landscape.
- ⇒ Similar app-based data collection conducted by the Grand Canyon Trust and USFS mapped **ephemeral stream courses across the Coconino and Kaibab national forests**. This work, featured in an Arizona Daily Sun article, is available in an [Arizona Daily Sun citizen scientist article](#).



Photo: Grand Canyon Trust

CIWG field trip

### Collaboration

- ⇒ **Signed charter members** in the 4FRI collaborative rose from 37 in 2015 to 45 in 2016, with more stakeholders stepping up into leadership roles.
- ⇒ 4FRI Stakeholders created the **Comprehensive Implementation Work Group (CIWG)** to help implement the full suite of restoration treatments under 4FRI (see calendar on Page 1 for CIWG meeting dates; contact [Travis Bruner](#) for more information).

### Planning

- ⇒ The USFS published the **Proposed Action for the 1.2 million-acre Rim Country Project** that covers portions of the Coconino, Tonto and Apache-Sitgreaves national forests in the summer of 2016, with three public meetings co-hosted with the 4FRI Stakeholder Group and USFS to solicit input. Based on public comments from the Proposed Action, the USFS has identified issues of concern and is developing and analyzing alternatives.
- ⇒ On the Apache-Sitgreaves National Forests, the **Upper Rocky Arroyo project** was signed and planning continues on the West Escudilla project.



Photo: The Nature Conservancy

### Other Highlights

- ⇒ 4FRI continues to benefit communities by providing supplies for industries and employment. Restoration treatments have reduced the risk of stand-replacing fire on nearly 530,000 acres since 2010.
- ⇒ Mottek Consulting (a 4FRI stakeholder) was awarded a grant to gather data on the economic impacts of 4FRI harvesting contractors.
- ⇒ Regional Forester Cal Joyner, Coconino County Supervisor Mandy Metzger, Brad Worsley from Novo-Power, and Steve Reidhead from Tri-Star Logging spoke to 300 attendees about 4FRI and forest restoration at the “Healthy Forest, Vibrant Economy” conference hosted by Salt River Project this past October.

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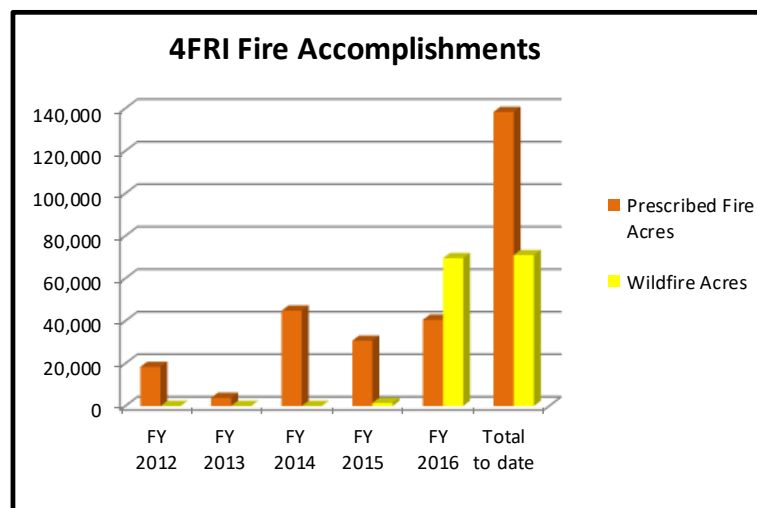
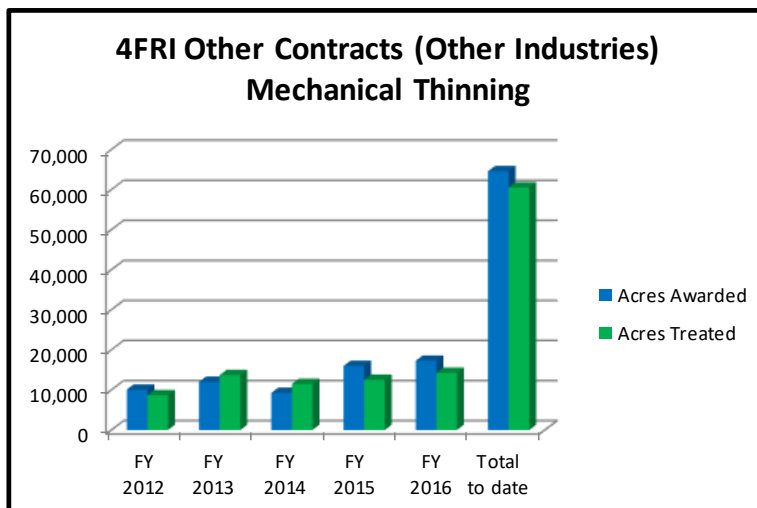
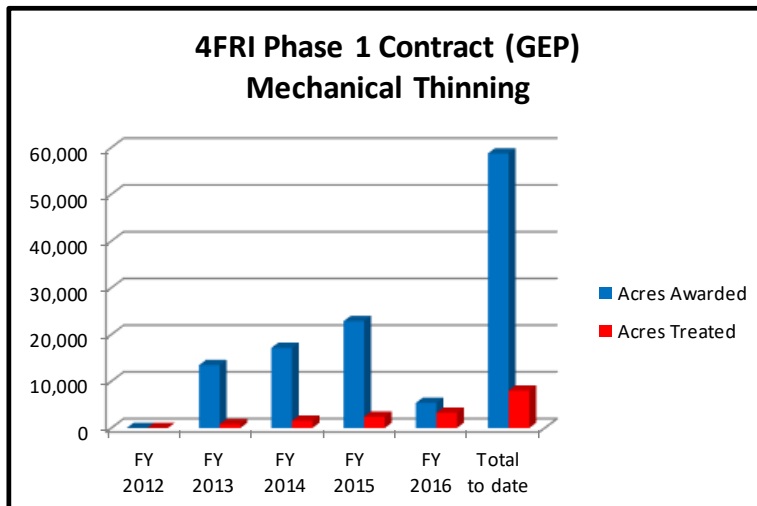
## A Year of Forest Restoration: 2016 in Review, cont'd

- ⇒ The Multi-Party Monitoring board hosted a **Mexican spotted owl management workshop** in early 2016; meeting notes can be found [here](#).
- ⇒ The USFS, U.S. Fish & Wildlife Service (USFWS), and NAU's Ecological Restoration Institute co-hosted a **4FRI Stakeholder Group field trip** to begin discussions on wet and dry mixed-conifer **management** in preparation for the Rim Country analysis.
- ⇒ The City of Flagstaff, USFS, 4FRI Stakeholder Group, and Greater Flagstaff Forest Partnership partnered together to present information on forest restoration at the **Harvesting Methods and Firewise Preparedness Open House** in Flagstaff this past May.
- ⇒ USFS led a field trip to observe **proposed actions within the CC Cragin watershed** area as part of the Salt River Project Board and Council Tour.
- ⇒ The 4FRI phase I stewardship contract has not met the 4FRI restoration goals originally envisioned. To maintain and grow a robust restoration economy on the west side of the project area (Kaibab and Coconino National Forests), the USFS is **now increasing wood offerings to businesses outside of the 4FRI Phase I contract**. This has helped grow interest by industry to one potential new mill in the Flagstaff area. In addition, USFS is supporting new ways to increase forest treatments, such as stewardship agreements with partners.

The USFS has set objectives for overall restoration efforts across the 4FRI landscape, and evaluates 25 performance measures to determine if these objectives are being met. For 2016, they have summarized these objectives in a report available on their 4FRI website here: [www.fs.usda.gov/4FRI](http://www.fs.usda.gov/4FRI). In summarizing the above information, lessons learned are included which stakeholders and the USFS will address in the future.

*\*For ease of display, only figures from the past five years (2012-2016) are shown. Reporting data has been gathered from 2010, the beginning of the 4FRI project.*

These three graphs represent forest restoration efforts in three attributes measured by stakeholders and the USFS: 1) treatments under the 4FRI Phase 1 Contract with Good Earth Power; 2) treatments with other industries; and 3) fire accomplishments. All summarize years 2012—2016 with a cumulative total to date.\*





## White Mountains Stewardship Project Final Report Completed

In the mid-1990s, government, conservation, and business interests in the White Mountains formed the Natural Resource Working Group (NRWG) recognizing the need to find common-ground solutions to address the building threat of wildfire and to restore fire-adapted forests across the region. From its inception, the NRWG tested various types of treatments conceived by this diverse group, starting with the Blue Ridge Demonstration Project and continually building support for a larger-scale project.

In the spring of 2004, the Apache-Sitgreaves National Forests (ASNF) initiated the White Mountains Stewardship Project (WMSP), the nation's first ten-year stewardship contract. The goal was to treat up to 15,000 acres per year, with a minimum of 5,000 acres per year guaranteed. This was a challenge for all parties—industry, in particular Future Forest, LLC, the winning bidder, had to take a risk to grow to fit this supply and make small-diameter tree harvesting economically viable; the USFS had to provide these acres under continuing social scrutiny; and conservation interests had to support a new model of forest management often without having all their questions answered immediately. For all, monitoring the project was a key to success, as lessons learned provided the impetus to adapt and change practices when necessary to keep the end goals—restored forests and reduced wildfire danger—in mind.

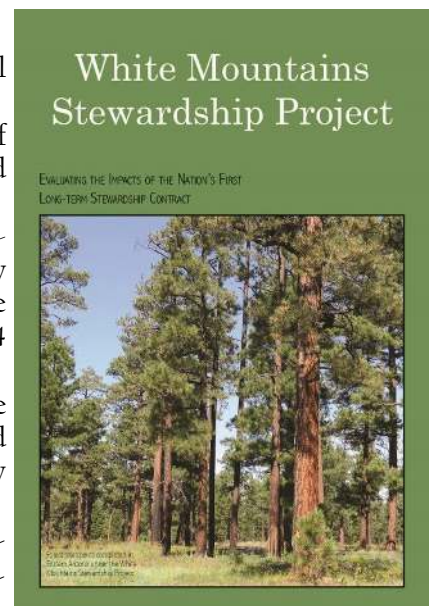
The rest of the story is one of success and lessons learned. Ten years later, more than 71,000 acres of overgrown, unhealthy forests have been treated. This huge effort also resulted in a renewed forest products industry, an improved economy, resilient and sustainable forests, and a proven set of options for a brighter future.

The final report for the WMSP, created under the leadership of the Ecological Restoration Institute, is now available online, both as a [full report](#) and as an [Executive Summary](#).

Some of the key findings include:

- ◇ Forest treatments can change fire behavior as proven by areas modeled as well as treatment areas monitored after the Wallow and San Juan wildfires.
- ◇ Managing vegetative structure is only one of many important outcomes of successful planning and implementation. Other activities should be included to ensure comprehensive restoration.
- ◇ Developing the appropriately-sized forest products industry that is economically sustainable is necessary. The WMSP created an average of 305 yearly jobs with sustainable forest industries infusing more than \$19 million into the local economy annually. Additionally, a diverse forest products industry of 24 businesses benefitted from the WMSP treatments.
- ◇ Contract framework and requirements must be designed to provide adequate confidence and potential for forest product industries to become established and sustainable. If these industries are not able to succeed, the opportunity may be lost for the future.

*Bruce Greco submitted this article as one of his last work projects; he is retired from the Ecological Restoration Institute as of January 6, 2017. We congratulate Bruce on his years of commitment to forest restoration across northern Arizona, and wish him the best in his new pursuits!*



## Greater Flagstaff Forests Partnership Wins National Partnership Award



The USFS and Natural Resources Conservation Service (NRCS) collect nominations annually for the Two Chiefs' Partnership Awards. The awards recognize successful conservation efforts made possible through partnerships working collaboratively to support conservation and forest stewardship.

At the November Greater Flagstaff Forests Partnership (GFFP) meeting, Mike Elson, Flagstaff District Ranger, and Shai A. Schendel of the Natural Resources Conservation Service (NRCS), presented the Two Chiefs' Partnership Award (2015) to GFFP Partners. Partners were recognized with individually framed awards. The citation on the awards states: "In recognition of your work with the Greater Flagstaff Forests Partnership to improve forest health, protect the community from wildfire, and educate the public." The awards were signed by both the Chief of the Forest Service and the Chief of the NRCS.

~Anne Mottek

Contact our 4FRI Stakeholder Group Co-Chairs: [Pascal Berlioux](#) [Steve Gatewood](#) [Tommie Martin](#) [Allen Reidhead](#)  
[Steve Reidhead](#) [Sue Sitko](#) [Greg Smith](#) [Paul Summerfelt](#) [Diane Vosick](#) [Paul Watson](#) [Jason Whiting](#) [Brad Worsley](#)

## Smoke: Holy or Wholesome?

The term “smoke ecology” and the idea that smoke has a significant role in fire effects is new to most, and astonishing to many. We know a natural fire regime is important for ecosystem health, but we are now learning that so is its “smoke regime,” which goes hand-in-hand with an area’s natural fire regime. A smoke regime can be measured based on the frequency, duration, chemical content, and concentration of smoke from wildland fire in the environment.

Species that have adapted to frequent-fire regimes are exposed to smoke much more regularly than they are exposed to the actual fire. Flora and fauna are exposed to smoke when it moves across landscapes, settling into low areas, and channeling through canyons and ravines—sometimes distant from the originating fire. Smoke deposits on soil surfaces and plants stay put until precipitation moves some of these deposits. We know relatively little about adaptations



specifically to smoke, but some research has been done on the effects of wildland smoke on species native to northern Arizona’s ponderosa pine forests.

Smoke can break dormancy, allowing species to germinate at a time when conditions favor survival of seedlings. Smoke has been shown to affect the rate and timing of germination for many species. With the exception of the work of Jon Keeley, studies in the U.S. on smoke effects have been few. These studies have shown that exposure to smoke can significantly increase root length and weight and increase number of leaves as well as the lengths of shoots. Smoke has been shown to inhibit fungi in pine seedlings, and some species of parasitic mistletoe. Overall though, we know little about smoke effects on fauna and non-vascular plants.

In the summer of 2014, Lata (Mary Lata; 4FRI planning team member) developed a pilot study of her own, in her backyard, for eight plant species and their response to smoke from ponderosa pine litter. She has just completed her third year of the study, which has shown that many plant species native to the ponderosa pine forests of northern Arizona are likely to respond to smoke. Treatments included a control (no smoke); smoking just the soil; smoking just the seeds, smoking both, and smoking the seeds, but waiting a week before planting them. For example, *Penstemon barbatus* has shown to have a positive response to smoke.

~Article and photos by Mary Lata



## Planning Workgroup Continues Verifying Large Young Tree Stands

On November 17, 2016, the Planning Workgroup conducted its second fieldtrip designed to validate the GIS methodology to be used to identify Stands with Preponderance of Large Young Trees (SPLYTs). The fieldtrip was a success, with broad participation and a visit to nine different sites, but confirmed the difficulty of the task at hand. The object was to validate whether the stands identified as SPLYTs through GIS analysis actually meet the expected on-the-ground condition. Field validation demonstrated that the first EIS methodology and the Rim Country EIS proposed methodology do not always identify the same stands, and that stands identified as SPLYTs by either or both methodologies do not always meet the expected criteria upon visual inspection. More work is needed in order to reliably identify SPLYTs through a GIS-only approach, and the Planning Workgroup will continue to pursue resolution to this important component of the Rim Country analysis area.



Photo: Grand Canyon Trust

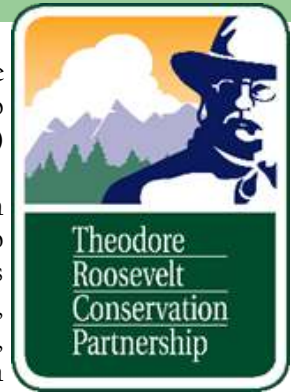
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## Collaboration on Sportsman's Values Mapping Project



The [Sportsmen's Values Mapping \(SVM\) Project](#) is a national initiative launched in 2007 by the Theodore Roosevelt Conservation Partnership (TRCP). In 2014, the Arizona Game and Fish Department (AZGFD) partnered with TRCP to refine and implement the SVM project.



The SVM project gathered input directly from sportsmen and women about Arizona's most valued places to hunt and fish. When it comes to telling others about their "secret" spots, hunters and anglers are famous for holding their cards close to their game vests and wading jackets. Yet, more than 1,200 Arizona sportsmen have willingly tipped their hands,

circling their favorite destinations on a map, as part of this national initiative to conserve fish and wildlife habitat while protecting and improving public access for hunting and angling.

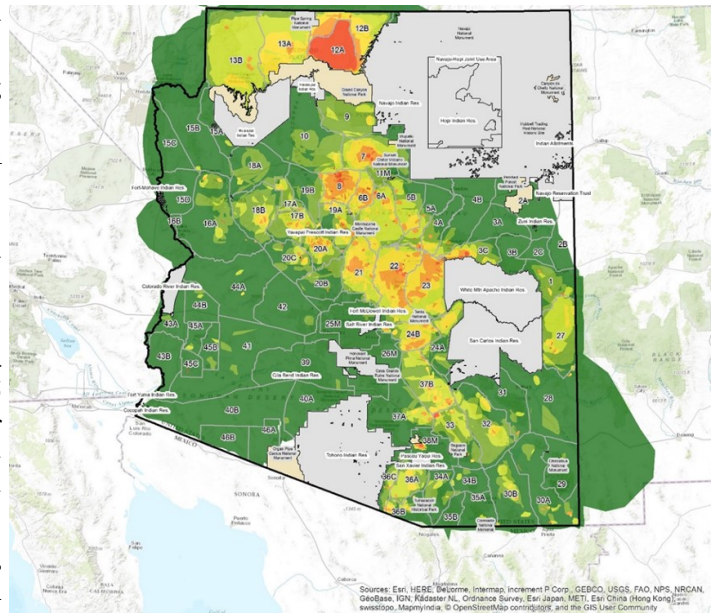
Final maps are available at [www.azgfd.com/recreation/valuemapping](http://www.azgfd.com/recreation/valuemapping), which features maps for 15 species of interest (elk, mule deer, white-tailed deer, bighorn sheep, javelina, predator, pronghorn, cold-water fish, warm-water fish, waterfowl, turkey, quail, doves [mourning and white winged], squirrel, and other small game). Included were questions about the factors motivating a sportsman to identify an area as being of value. The primary motivation was that a valued area offered the greatest chance of harvesting game. Other primary motivations were that the area was close to home, or someone's usual or traditional spot to hunt or fish.

The resulting maps will be used in combination with maps of critical habitat, migration routes, land ownership boundaries, etc. to guide policy makers at the local, state, and national level to responsibly manage and provide continued access to high-valued hunting and fishing areas, as well as the following:

- ◇ Balance other land uses with fish, wildlife, and sportsmen's needs;
- ◇ Identify areas needing stronger conservation effort; and potential habitat work necessary;
- ◇ Justify actions and funding requests for conservation projects;
- ◇ Identify public access needs; and
- ◇ Help with hunter and angler recruitment and retention strategies.

The project has been endorsed by the Arizona Sportsmen for Wildlife Conservation, an alliance of 25 Arizona sportsmen's groups, as well as the state chapter of the National Wild Turkey Federation, Trout Unlimited, Arizona Elk Society, and Arizona Antelope Foundation.

For more information, contact Dr. Richard Lawrence, GIS Supervisor, at Arizona Game & Fish ([rlawrence@azgfd.gov](mailto:rlawrence@azgfd.gov)) or John Hamill, Arizona Field representative for TRCP ([jhamill@trcp.org](mailto:jhamill@trcp.org))



Mule Deer SVM example: Red areas valued highest; yellow—moderate; green—low. Tribal lands and National Parks are blanked out. Credit: TRCP/AGFD

### Stay Connected

Visit our 4FRI Stakeholder website, [www.4fri.org](http://www.4fri.org), to learn more about our collaborative efforts to support forest restoration across northern Arizona.

The U.S. Forest Service has a comprehensive 4FRI webpage, [www.fs.usda.gov/4fri](http://www.fs.usda.gov/4fri), that holds all of the public documentation records of the 4FRI project, including maps, contacts, planning procedures, and public input opportunities.

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